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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/696,751	10/29/2003	John Frederick Porter	11277-0039	7560

8933 7590 11/15/2005

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EXAMINER	
MAKI, STEVEN D	
ART UNIT	**PAPER NUMBER**
1733	

DATE MAILED: 11/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/696,751	PORTER, JOHN FREDERICK	
	Examiner	Art Unit	
	Steven D. Maki	1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 July 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *9-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *9-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *102105,070505*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1) The terminal disclaimer filed 7-5-05 has been disapproved because "the owner percent interest statement" and the "shall be enforceable statement" is missing. It appears that terminal disclaimer is not necessary since (1) this application was filed on 10-29-03 and (2) MPEP 711.03(c) states: "For utility and plant applications filed on or after May 29, 2000, a terminal disclaimer (and fee) is not required since the period of abandonment is reduced from the patent term adjustment pursuant to 37 CFR 1.704."

2) The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

> The oath or declaration is defective because:
> The specification to which the oath or declaration is directed has not been adequately identified. See MPEP § 601.01(a).

The declaration identifies the specification as being application 10/155,650 (the parent application) filed 5-23-02 instead of application 10/696751 (this application) filed 10-29-03; it being noted that application 10/155650 contains twenty six original claims whereas this application 10/696751 contains eight original claims.

3) The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4) Claims 10 and 12 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to

one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

As to claim 10, the subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention (i.e. the new matter) is applying the wetting agent on the mesh fibers prior to the step of forming the mesh first layer. The original disclosure describes applying the wetting agent to the first component 20 (woven knit or laid scrim) instead of applying the wetting agent to the fibers prior to weaving or knitting the fibers.

As to claim 12, the subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention (i.e. the new matter) is the subject matter of "chemical binder comprises the wetting agent". The original disclosure describes a chemical binder that may reduce or even eliminate the need for subsequent wetting and adhesion treatments on the second component 22, but fails to support "chemical binder comprises the wetting agent. The original disclosure for example fails to teach a composition comprising binder (e.g. epoxy adhesive) and wetting agent (e.g. surfactant).

5) The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6) **Claims 9-11 and 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Newman et al (US 6054205) in view of Cooper (US 6254817) or Japan 777 (JP 7-277,777) and further in view of at least one of Great Britain '687 (GB 2023687), Piazza (US 4229497) and Berk et al (US 5753368) and optionally Schupack (US 4617219).**

With respect to coating with thermoplastic before forming the mesh, Cooper et al and Japan 777 are applied in the alternative since Japan 777 is available as prior art under 102(b) whereas Cooper et al is available as prior art under 102(e).

With respect to wetting agent, Great Britain 687, Piazza and Berk et al suggest using a wetting agent to facilitate incorporation of fibers in cemetitious material.

Although not clearly claimed in claim 9, the optional Schupack addresses forming the mesh and nonwoven and then uniting the mesh and nonwoven.

Newman discloses making a smooth reinforced cement board comprising cementitious material, a nonwoven comprising thermoplastic fibers and a mesh comprising thermoplastic covered glass fibers. Newman et al discloses a method of making a glass fiber facing sheet for making a cement board comprising (1) providing an open mesh glass fiber scrim wherein the scrim comprises longitudinal and transverse glass fiber yarns; (2) passing the open mesh glass fiber scrim through a resinous bath so as to form a polymer coating on the yarns wherein the polymer coating is alkali and moisture resistant (col. 4 line 47 to col. 5 line 67 and col. 7 line 57 to col. 8 line 12; especially col. 5 lines 46-61, col. 8 lines 6-11); and (3) joining a nonwoven web to the scrim by forming a melt blown nonwoven thermoplastic fiber web on the coated

open mesh glass fiber scrim such that the thermoplastic fibers adhere to the coated open mesh glass fiber scrim (col. 6 lines 1-63, and col. 8 lines 13-24). Newman et al also teaches using the facing sheet to prepare cementitious boards of various types using cement board manufacturing apparatus and manufacturing layouts. See col. 3 lines 38-43. In particular, Newman et al teaches depositing a cementitious slurry on a first facing sheet and applying a second facing sheet on the cementitious slurry and pressing using rolls 80 such that the cementitious slurry is forced up through the mesh openings of the glass fiber facing sheet to mechanically integrate (i.e. embed) the exposed three dimensional grid profile structure of the facing sheet into the cementitious core. See figure 6 and description relating thereto. As cementitious material, Newman et al teaches using gypsum cement, Portland cement, etc. See col. 9 lines 15-20. The cement board has a smooth exterior surface. See for example col. 2 lines 61-63.

Although Newman et al teaches a glass fiber mesh and coating the glass fibers with thermoplastic material to prevent chemical interaction between the glass fibers and cement (alkaline cementitious material), Newman et al teaches coating the glass fibers before making the mesh instead of prior to making the mesh. However, it would have been an obvious alternative to one of ordinary skill in the art to coat the glass fibers before forming the mesh instead of after forming the mesh in Newman et al's process of making a smooth reinforced cementitious board since (1) Cooper et al, directed to making reinforced cementitious boards, suggests encapsulating glass fibers in alkali resistant thermoplastic before forming a mesh from the glass fibers or (2) Japan 777, directed to alkali-resistant glass fiber for cement, suggests either coating glass fibers

themselves or coating a woven fabric comprising glass fibers. See paragraph 11 of machine translation. During a partial oral translation of paragraph 11 of Japan 777 by a PTO translator, the following information as obtained: With the aforementioned surface processing, glass fibers themselves need not be implemented. In general, woven materials, nonwoven cloth, mat like materials and the like with glass fiber structures are as effective as glass fibers in filling the intersection points of the fibers. From this disclosure, one of ordinary skill in the art would readily understand that Japan 777 suggests coating before forming a mesh, but prefers coating after forming a mesh.

Newman et al does not specifically recite applying a "wetting agent".

Great Britain '687, also directed to a cementitious board having a fiber sheet embedded therein, suggests surface treating at least one of fibers of the nonwoven and the scrim with a wetting agent to achieve a more rapid and intimate wetting of the fibers by the cementitious material (i.e. gypsum). See page 2 lines 41-47, 52-59, page 3 lines 6-22, 64-71) of Great Britain '687.

Piazza teaches working glass fiber matrix and/or scrim reinforcing material into the wet cement mixture. Piazza suggests using dilute latex (wetting agent) to assist in the wetting operation. See col. 5 lines 6-12.

Berke et al teaches that fibers made from metal, glass and synthetic materials, such as polyolefins, have been employed in concrete (mixture comprising cement, water and aggregate) to provide additional tensile strength and to reinforce against impact damage. Berke et al teaches that polyolefin fibers tend to be hydrophobic due to the nature of the material and require a wetting agent to provide the surface tension

characteristic that allows then to become more easily dispersed within the aqueous concrete mix. See col. 1 lines 10-29. Berke et al specifically teaches coating synthetic fibers with a particular glycol ether (wetting agent) and incorporating those fibers in cement. Example 2.

As to claims 9-11 and 13-16, it would have been obvious to one of ordinary skill in the art to apply a wetting agent on the water resistant and alkali resistant, mesh fibers (thermoplastic coated glass fiber mesh) and the water resistant and alkali resistant, randomly oriented fibers (thermoplastic fiber nonwoven) for the advantage of improving / expediting the mechanical integration desired by Newman et al in view of the suggestion from at least one of Great Britain 687, Piazza and Berk et al to use a wetting agent to facilitate incorporation of fibers in cementitious material. The claimed "wetting agent" reads on Great Britain 687's wetting agent for achieving a more rapid and intimate wetting of fibers, Piazza's dilute latex for assisting in a wetting operation or a wetting agent (e.g. DPTB) disclosed by Berke et al.

Claim 9 reads on simultaneously providing and uniting. In any event: As to claim 9, it would have been an obvious alternative to form the nonwoven web and scrim and *then* unite since Schupack, also directed to a cementitious board having a fiber sheet embedded therein, suggests providing a nonwoven and a scrim and then bonding the nonwoven to the scrim by any appropriate means such as melt bonding and the like in order form a fiber sheet for embedment in cementitious material. See for example col. 4 lines 14-45, example 1.

As to claim 10, it would have been obvious to apply wetting agent on the mesh fibers prior to forming the mesh first layer since Berke et al teaches that individual fibers may be coated with a wetting agent.

As to claim 11, Shupack suggests separately forming the fiber containing mesh and the fiber containing nonwoven and at least one of Great Britain 687, Piazza and Berke et al suggest applying a wetting agent to fibers to be incorporated in cementitious material.

As to claim 13, Great Britain 687 suggests applying wetting agent to the combination of a nonwoven and a fabric.

As to claims 14-16, it would have been obvious to simultaneously apply wetting agent on the thermoplastic coated glass fiber mesh and the thermoplastic fiber nonwoven (claims 14, 16) / convey the united mesh and nonwoven in a continuous production apparatus (claim 15) in view of (1) Newman's suggestion to use the united mesh and nonwoven in a continuous production apparatus for making a cement board and (2) Great Britain 687's teaching to apply wetting agent to the combination of a nonwoven and a fabric.

7) **Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Newman et al in view of Cooper or Japan 777 and further in view of at least one of Great Britain '687, Piazza and Berk et al and optionally Schupack as applied above and further in view of Kennedy et al (US 5308692).**

As to claim 12, it would have been obvious to one of ordinary skill in the art to form the nonwoven which is joined to the mesh by bonding the randomly oriented fibers

with a chemical binder comprising a wetting agent since Kennedy suggests forming a nonwoven (facing material for building products) by bonding the fibers together with a (fire resistant) composition, which may comprise a wetting agent (col. 9 lines 55-61).

Remarks

8) Applicant's arguments with respect to claims 9-16 have been considered but are moot in view of the new ground(s) of rejection; it being noted that new claim 9 differs from original claim 1 by requiring both "glass core strand material protectively coated with the thermoplastic material prior to forming the mesh first layer" and "applying a wetting agent on the water resistant and alkali resistant, mesh fibers and the water resistant and alkali resistant, randomly oriented fibers" (instead of "treating at least one of said first and second components to enhance at least one of wetting and adhesion characteristics thereof with respect to hydraulic cement when said reinforcement is embedded therein").

Applicant's arguments filed 7-5-05 have been fully considered but they are not persuasive.

With respect to "glass core strand material protectively coated with the thermoplastic material prior to forming the mesh first layer", applicant argues that, in Newman et al, it would not be feasible to coat the yarns 25 and 30 with the binder, before the yarns are made into a scrim. This argument is not persuasive. Newman et al teaches forming a mesh. Newman et al teaches using alkali resistant thermoplastic material (i.e. the binder) to prevent chemical interaction between the glass filamentary material and alkaline cementitious material. Hence, there is ample motivation

(prevention of chemical interaction) to use a mesh of glass fibers in Newman et al wherein the glass fibers are coated with thermoplastic material. As to *when* the glass fibers are coated, Cooper or Japan 777, both directed to reinforcing fiber material for cement, provide ample suggestion to coat glass fibers with an alkali-resistant coating *before* the yarns are made into the scrim.

Applicant argues that coating the glass fibers in Great Britain 687 would exacerbate the failure of the glass fibers if embedded in an alkali cement board. This argument is not persuasive. First: Newman et al and Cooper / Japan 777 teach applying an alkali resistant coating on glass fibers for reinforcement of cement. More specifically, Newman et al and Cooper / Japan 777 provide the solution (alkali resistant coating) to the **problem of protecting glass fibers from alkaline cementitious material**. Second: Newman and Great Britain 687 teach embedding a combination of mesh and nonwoven in cementitious material. Newman et al teaches using cement or gypsum for the cementitious material. Great Britain 687 teaches using gypsum for the cementitious material. Great Britain 687 adds to the disclosure of Newman et al by teaching a solution (use of wetting agent) to the **problem of entering a combination of nonwoven and mesh into cementitious material**. One of ordinary skill in the art would have had a reasonable expectation of success since Newman et al and Cooper / Japan 777 teach applying an alkali resistant coating on glass fibers for reinforcement of cement.

With respect to "applying a wetting agent on the water resistant and alkali resistant, mesh fibers and the water resistant and alkali resistant, randomly oriented

fibers", applicant emphasizes that the "wetting agent" enhances wetting and adhesion to an alkali cementitious matrix. This argument is not commensurate in scope with the clams since none of the clams require a wetting agent to enhance wetting and adhesion to an alkali cementitious matrix. As a related matter, applicant argues that there is no teaching in Great Britain 687 of a water resistant thermoplastic material having a composition to enhance wetting and adhesion to an alkali cementitious matrix. The claimed "wetting agent" reads on Great Britain 687's wetting agent for achieving a more rapid and intimate wetting of fibers, Piazza's dilute latex for assisting in a wetting operation or a wetting agent (e.g. DPTB) disclosed by Berke et al.

With respect to Schupack, applicant argues that there is no teaching of a water resistant thermoplastic material composition to enhance wetting and adhesion to an alkali cementitious matrix. At least Newman et al, teaches thermoplastic material as claimed.

9) No claim is allowed.

10) Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11) Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven D. Maki whose telephone number is (571) 272-1221. The examiner can normally be reached on Mon. - Fri. 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Dunn can be reached on (571) 272-1171. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Steven D. Maki 11-11-05
STEVEN D. MAKI
PRIMARY EXAMINER

Steven D. Maki
November 11, 2005